12 Coastal Nonpoint Source Pollution Program

Following the enactment of the Clean Water Act (CWA) in 1972, regulatory attention has focused on the chemical aspects of water quality and controlling "point source" pollution discharged into waters through pipes, primarily from industrial facilities and municipal sewage treatment plants. These efforts were controlled by permits issued by states and USEPA under the National Pollutant Discharge Elimination System (NPDES) established by section 402 of the CWA.

The NPDES program continues to have considerable success in cleaning up the nation's waters. However, nonpoint source pollution (NPS) remains a major problem. Unlike "point source" pollution, NPS is created by many diffuse sources. Rainfall and snowmelt move across the ground as runoff, picking up and transporting pollutants to rivers, lakes, and wetlands. This threatens our drinking water supplies, recreation, fisheries, and wildlife. NPS results from a variety of land use practices including:

- Excessive application of fertilizers, herbicides and pesticides from agricultural lands and residential areas
- Oil, grease, salt, and toxic chemicals from urban roadways
- Sediment from construction sites, agriculture, forestlands, and eroding drainage ways
- Bacteria and nutrients from livestock, pet waste and faulty septic systems

To address NPS, Congress enacted Section 319 of the CWA in 1987, authorizing the USEPA to adopt and implement control programs and issue grants to states. Under Section 319, NPS is defined as "Land management activity or land use activity that contributes or may contribute to ground and surface water pollution as a result of runoff, seepage, or percolation and that is not defined as a point source in Section 115.01, subdivision 15." Requirements include identification of best management practices (BMPs) and measures that will be used to reduce pollutant loads on the state's surface and groundwater resources, along with the identification of programs and goals to guide and achieve their implementation.

NPS is a key factor in the degradation of many coastal waters, including the Great Lakes. It affects diversity of plants and animals, major recreational areas, and water supplies for millions of people. Coastal waters are especially affected by NPS due to the large number of people that live near the coast. The population density, and growth and development in coastal regions, has resulted in pressure on our coastal lands and waters.

In recognition of coastal population growth, Congress made determined that state management programs under the CZMA are among the best tools for protecting coastal resources and improving coastal water quality. A new program was enacted under Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA), specifically addressing NPS effects on coastal water quality. It is jointly administered by NOAA and USEPA, bringing together the state's coastal zone management agency (IDNR) and the state's Section 319 agency (IEPA).

Section 6217 requires each state with an approved coastal zone management program to develop a coastal NPS program and implement coastal NPS "management measures" to restore and protect coastal waters. The central purpose of Section 6217 is to strengthen the links between federal and state coastal zone management and water quality programs and to enhance state and local efforts to manage land use activities that degrade coastal waters and habitats.

Program Objectives and General Requirements

The coastal NPS program will improve coordination, and build partnerships and networks, that facilitate methods to minimize polluted runoff. Working with state and local authorities, the program encourages pollution prevention at a local level, particularly improvements to land use planning and zoning practices. The program serves as an update and expansion of Illinois' Section 319 program as it relates to land and water uses affecting coastal waters.

Within 30 months following ICMP approval, Section 6217 requires that Illinois develop a draft Coastal NPS program and submit it to the USEPA and NOAA for approval. General Section 6217 requirements will include:

- Identification of, and a continuing process for identifying land uses which, individually or cumulatively,
 may cause or contribute significantly to degradation of those coastal waters where there is failure to
 attain or maintain applicable water quality standards or protect designated uses, which are
 threatened by reasonably foreseeable increases in pollution. These areas will be considered critical
 coastal areas within which any new land uses or substantial expansion of existing land uses will be
 subject to management measures.
- The implementation of additional management measures applicable to the identified land uses and critical coastal areas necessary to achieve and maintain water quality standards and protect designated uses.
- Assistance to local governments and the public for implementing the management measures and determining their effectiveness, including assistance in developing ordinances and regulations, technical guidance and training, demonstration projects, and financial incentives.
- Opportunities for public participation in all aspects of the program, including public hearings, technical and financial assistance, and public education.
- Establishment of mechanisms to improve coordination among state agencies and between state and local officials responsible for land use programs, permitting and enforcement, habitat protection, public health and safety, i.e., through joint project review and memoranda of agreement.

The NPDES Phase I storm water rule continues to apply to construction activities greater than five acres, as well as to municipal separated storm sewer systems (MS4s) in urbanized areas that serve more than 100,000 people. NPDES Phase II, expanded coverage of permitted activities to include construction activities between one and five acres, as well as MS4s in urbanized areas that serve between 50,000 and

100,000 people (and, in some cases, localities with fewer than 50,000 people). USEPA and NOAA identified ten management measures that overlap in part or in full with the expanded NPDES storm water regulations. Thus, storm water runoff that ultimately is regulated by a NPDES permit is not required to be addressed the coastal NPS program.

NOAA and USEPA approved use of Section 401 Clean Water Act certifications to manage the impacts of NPS. States can implement management measures in sequence and assess their effectiveness in achieving water quality goals. Guidance documents identified major categories of nonpoint sources that impair or threaten coastal waters nationally:

- Agricultural Runoff
- Silvicultural (forestry)
- Urban Runoff (developing and developed areas)
- Marinas and Recreational Boating
- Hydromodification: Channelization and Channel Modification, Dams, and Streambanks and Shoreline Erosion
- Wetlands, Riparian areas, and Vegetated Treatment Systems (This category promotes the protection and restoration of wetlands and riparian areas, and vegetated treatment systems as management measures to control NPS emanating from a broad variety of sources.)

These guidance documents provide general technical guidance for NPS management such as source control, delivery reduction and a management systems approach. USEPA determined management measures identified in the guidance are economically achievable, and Congress defined "management measures" to mean "economically achievable measures ... which reflect the greatest degree of pollutant reduction achievable through the application of the best available nonpoint pollution control practices, technologies, processes, siting criteria, operating methods, or other alternatives."

The 1993 guidance provided both regulatory and non-regulatory approaches, and other innovative approaches to ensure implementation of management measures. Many examples are in-place in our coastal communities. Examples include local storm water ordinances for development projects to control storm water peak flows, total runoff volume, or pollutant loading. Developers are often required to implement storm water practices, such as detention ponds or constructed wetlands, to meet performance standards.

Non-regulatory approaches include flexibility to employ economic incentives, disincentives, or innovative approaches to address non-point sources, if the state can ensure such approaches will result in the necessary implementation. States must include enforcement authorities for voluntary programs that could include sunset provisions for incentive programs. State tax credits, tax deductions, tax

rebates, cost-share programs, performance bonds, loan programs, and other economic incentives may be used to provide financial support.

NOAA and USEPA expect states employ a range of approaches to meet enforceable policies and mechanisms, and identify those portions of the coastal nonpoint programs that will be implemented by local governments. They also expect states to include a program to provide technical and other assistance to local governments and the public. NOAA and USEPA do not expect states to implement management measures for nonpoint sources that do not, individually or cumulatively, have a significant impact on coastal waters. NOAA and USEPA allow states to further exclude sources either by category, subcategory or management measure, or on a geographic basis (e.g., a Section 6217 management area, watershed, county) where states can provide information (e.g., monitoring data) to demonstrate a source is, or reasonably not expected to, become significant, either individually or cumulatively.

Existing Water Quality Management Plans and Programs in Illinois

- Illinois Environmental Protection Agency. 1988. Assessment of Nonpoint Source Impacts on Illinois Water Resources. Division of Water Pollution Control, IEPA/WPC/88-020
- Illinois Department of Agriculture. 1992. Statewide Survey for Agricultural Chemicals in Rural, Private Water-Supply Wells in Illinois. #8522
- Illinois Environmental Protection Agency. 1992. *Illinois Water Quality Management Plan.* Division of Water Pollution Control, IEPA/WPC/92-220
- Illinois Environmental Protection Agency. August 2008. *Illinois Integrated Water Quality Report and Section 303(d) List 2008.* Bureau of Water, IEPA/BOW/08-016
- Illinois Environmental Protection Agency. July 2001. *Illinois Nonpoint Source Management Program.*Bureau of Water, IEPA/BOW/01-009
- Chicago Metropolitan Agency for Planning and the Illinois Environmental Protection Agency. May 2007. *Guidance for Developing Watershed Action Plans in Illinois*

Illinois' Current Nonpoint Source Management Program

State assessment of nonpoint source impacts show the majority of Illinois' NPS problems are caused by agriculture, urban runoff, hydrologic modifications, and resource extraction.

The Illinois Nonpoint Source Management Program (INSMP) provides an overview of program initiatives to address water resource problems and provide guidance in the management of NPS water resource problems. Requirements of Section 319 include:

- Identification of BMPs and measures that will be used to reduce pollutant loads on the state's surface and groundwater resources;
- Identification of programs to achieve implementation of BMPs;
- Identification of goals to guide implementation of BMPs and NPS control programs;
- Certification that the laws of the State provide adequate authority to implement the NPS management program;
- Identification of financial assistance programs, which will support the implementation of BMPs and NPS control programs; and
- Identification of federal assistance programs and development projects the state reviews for their effect on water quality.

The primary objective of the INSMP is to continue reduction of NPS in Illinois. The ICMP, following development of its NPS program, will:

- Expand, update and/or create research programs to protect the state's water resources from NPS;
- Continue the process that enables state agencies and organizations to equitably prioritize NPS control projects for funding;
- Continue incorporation of "improved water quality" as a priority objective in all NPS reduction programs; and
- Increase the public's awareness and involvement in local NPS initiatives to serve as a catalyst for state and federal involvement.

IEPA Regulatory Authorities

Section 319 of the CWA requires that Illinois identify those laws or authorities, which certify the IEPA as the state water pollution control agency responsible for developing and implementing the Nonpoint Source Management Program.

Section 4(1) of the Illinois Environmental Protection Act ("Act") designates IEPA as the "water pollution control agency" for the state. One of the purposes of the CWA, as stated in Section 101(a)(7), is the "expeditious development and implementation of programs for the control of nonpoint sources of pollution." Section 319 requires, among other things, the development of state management programs for controlling pollution to navigable waters from nonpoint sources. The Act designates IEPA as the "water pollution control agency" for Illinois. IEPA is also authorized under Section 4(1) to take necessary action to secure benefits of the CWA and other federal acts (e.g., NPS Program and Section 6217).

Section 319(a)(2) permits a state to rely upon information developed pursuant to Section 303(e), among others, to develop the Assessment required to be submitted in conjunction with the State NPS Program - Section 303(e), IEPA is required to have a continuing planning process approved by USEPA resulting in water quality management plans for all navigable waters in the state. States were also allowed to use in state assessment reports, appropriate elements of waste treatment management plans developed pursuant to CWA Sections 208(b) and 303(e). IEPA is authorized pursuant to Section 4(m) of the Act to engage in planning processes and activities pursuant to Section 303(e) and use that information for state assessment reports is a further indication of IEPA's authority to develop state management programs to control nonpoint sources of pollution to navigable waters.

Illinois' NPS Assessment report entitled "Assessment of Nonpoint Source Impacts on Illinois Water Resources" was developed pursuant to Section 319 primarily for the purpose of identifying waters in the state that need additional corrective actions to attain or maintain "applicable water quality standards or the goals and requirements" of the CWA, and to identify the nonpoint sources which add significant pollution to navigable waters. Assessment updates are provided by the biennial 305(b) report. Data from this report and other sources assess the IEPA's success.

The following is a summary of assessment results found for Lake Michigan (Reference 5, p. 6):

Lake Michigan includes 63 shoreline miles forming the northeastern portion of Illinois' border. All 63 miles were rated full support/threatened for overall use due to sport fish consumption advisories. Aquatic life use was also rated full/threatened. For swimming use, 50 miles of Illinois' beaches were rated full use and 13 miles partial support/minor impairment. All 63 miles of the Illinois shoreline fully supported drinking water uses but were rated as non-support for fish consumption.

Of the five Illinois harbors evaluated, four (Waukegan, GLNTC, Chicago, and Calumet) were rated as non-support for fish consumption due to fish advisories, and one (Wilmette) as partial support/moderate impairment for both overall and aquatic life use. Support of the swimmable use in harbors could not be determined for lack of data. Swimming in most harbors is not allowed by local authorities for reasons other than water quality.

Priority organics, PCBs and chlordane pose a potential major impact along the entire 63 miles of Illinois Lake Michigan shoreline. Priority organic compounds tend to bioaccumulate in fish flesh even though rarely detected in water column samples and are a problem in sediment in localized harbor areas. Lead, zinc, and copper are a major problem in harbor sediments. Harbors with heavily polluted sediments include Waukegan Harbor (PCBs, lead, and zinc), GLNTC Harbor (copper, lead, and zinc), Chicago Harbor (lead), and Calumet Harbor (lead and zinc). Urban runoff and combined sewer overflows are a moderate/minor source of pollutants.

Best Management Practices (BMPs)

IEPA's Assessment describes the process that Illinois agencies and organizations cooperatively work with local watershed steering committees to select effective BMPs for implementation. BMPs, utilized to reduce NPS during implementation of these watershed projects, are identified in Table 1 in the IEPA July 2001 report. There are 157 BMPs listed in that table. All BMPs implemented through the Illinois NPS Management Program must be designed and constructed in accordance with the standards and specifications as identified in the report.

Illinois NPS Program Initiatives

Illinois has an aggressive NPS control program that includes many local, state, and federal organizations. Illinois organizations conduct many programs to address the major NPS categories, including agriculture, construction, urban runoff, resource extraction, hydrologic modification, and silviculture. Citizen groups, not-for-profit organizations, and educational institutions have developed a variety of NPS project initiatives. These initiatives frequently cover areas not normally included in state and federal NPS programs.

The Illinois Water Quality Management Plan (WQMP) serves as a catalyst for the development of many NPS programs.

ICMP Non-Point Pollution Control Enforceable Policies and Authorities

IEPA Land Use Categorical Assessment

The CZARA amendments contain guidance that specify management measures to address source categories of NPS: agriculture, silviculture, urban, marinas, and hydromodification. The ICMP inland coastal zone includes the entire Lake Michigan and the inland waterway corridors. The ICMP will only include the Lake Michigan watershed portion (approximately 85 square miles) in the Coastal NPS Control Program. The watershed is nearly exclusively in urban land use. The following is a summary of IEPA's assessment of the land uses, and programs, by categories.

Agriculture Source

de minimis

The exclusion of agriculture is proposed since agricultural use in Illinois' Coastal Area represents an insignificant portion of the total land usage, and nonpoint source inventories and data (305(b) and 303(d)) do not significantly contribute to degradation by agricultural activities.

Forestry Source Category

de minimis

Exclusion of forestry is proposed since commercial forestland use in Illinois' Coastal Area represents an insignificant portion of the total land usage, and nonpoint source inventories and data (305(b) and 303(d)) do not significantly contribute to degradation by forestry management or harvesting.

Urban Areas Source

55 ILCS 5/ Counties Code regarding the National Flood Insurance Act of 1968

415 ILCS 55/ Illinois Groundwater Protection Act

525 ILCS 45/ Water Use Act of 1983

615 ILCS 5/ Rivers, Lakes and Streams Act

615 ILCS 5/14a IEPA, IDNR, IPCB coordinate preservation of Lake Michigan water

615 ILCS 5/18 (permitting of fills along streams and Lake Michigan)

615 ILCS 5/18a, b, d (permitting/use of materials and minerals at or below bed of public waters)

615 ILCS 5/18f (defining and permits for construction in floodplains)

615 ILCS 5/24 Shoreline encroachment and bed of Lake Michigan in trust for Illinois citizens

615 ILCS 15/ Flood Control Act of 1945

615 ILCS 20/ Navigable Waters Obstruction Act

70 ILCS 3715/ Water Authorities Act

415 ILCS 25/ Water Pollutant Discharge Act

"NPDES Storm Water Program" - The CWA Amendments of 1987 established the NPDES storm water program. The Act called for implementation in two phases. Phase I addressed the most significant sources of pollution in storm water runoff. Phase II addressed other sources to protect water quality. Municipalities located in urban areas as defined by the Census Bureau are required to obtain NPDES permit coverage for discharges from their municipal separate storm sewer systems (MS4s). Municipalities located outside urbanized areas may need to comply within 180 days notice or as determined by the NPDES Permitting Authority. As of March 10, 2003, construction sites that disturb one acre or more are required to have a NPDES general permit for storm water discharges from construction site activities. Municipalities under 100,000 populations are no longer exempt from the construction site and the industrial storm water requirements. Wastewater treatment plants of 1.0 mgd or more need a General Storm Water Permit for Industrial Activities. The "no-exposure" exemption definition has been expanded to all industrial categories except construction.

"303(d)/TMDL Program" - Section 303(d) of the CWA requires states to identify waters that do not meet applicable water quality standards or do not fully support their designated uses. States are required to submit a prioritized list of impaired waters, known as the 303(d) List, to USEPA for review and approval. The CWA also requires a Total Maximum Daily Load (TMDL) be developed for each pollutant of an impaired water body. Establishment of a TMDL sets a pollutant reduction goal necessary to improve impaired waters. It determines the load, or quantity, of any given pollutant that is allowed in a particular water body. A TMDL must consider all potential sources of pollutants, whether point or nonpoint, taking into account scientific uncertainty and the effects of seasonal variation. Developing TMDLs in a

watershed begins with the collection of vast amounts of data on factors including water quality, point source discharge, precipitation, soils, geology, topography, and land use. All impaired water-body segments within the watershed are identified, along with the potential pollutants causing the impairments. IEPA then determines the tools (e.g. computer models) necessary to calculate pollutant loads and develop the TMDL. The model can be used to develop different scenarios, by first determining the amount of specific pollutants each source contributes, then calculating the amount each pollutant needs to be reduced, and finally specifying how the reduced pollutant load would be allocated among the different sources. After the reduced pollutant loads have been determined, an implementation plan is developed, spelling out the actions necessary to achieve the goals, specifying limits for point source discharges and recommending BMPs for nonpoint sources. It also estimates associated costs and lays out a schedule for implementation.

Marinas and Recreational Boating Source Category

20 ILCS 860/ Outdoor Recreation Resources Act
20 ILCS 2705/285 (can undertake port and waterway development planning and studies)
615 ILCS 5/18 (permitting of fills along streams and Lake Michigan)
615 ILCS 5/18a, b, d (permitting/use of materials and minerals at or below bed of public waters)
615 ILCS 5/18f (defining and permits for construction in floodplains)
615 ILCS 5/24 Shoreline encroachment and bed of Lake Michigan in trust for Illinois citizens
615 ILCS 20/ Navigable Waters Obstruction Act

"Dredge and Fill Permit Program" - Construction projects in Illinois waterways, floodplains, and wetlands often require authorizations from both t USACE and IEPA. Applicants seeking a permit to allow discharges of dredged or fill material into waters of the United States, including streams, lakes, and wetlands must apply to the USACE for a permit under Section 404 of the CWA. Activities that require a Section 404 permit include navigational dredging, levee construction, channel clearing, filling of wetlands for land development, and waterway impoundment for construction of a water reservoir. IEPA issues water quality certification pursuant to Section 401 of the CWA. This certification must be issued prior to the commencement of construction activity for all projects requiring a Section 404 permit.

"Water Quality Standards" - All waters in Illinois, including Lake Michigan and its tributaries, must meet State Water Quality Standards. This means that all waters in the Great Lakes basin must be free from substances, materials, debris, oil or scum attributable to municipal, industrial, agricultural, and other land use practices. Also, other discharges must not form objectionable deposits; not be in amounts to be unsightly; not produce color, visible oil sheen, odor, or other objectionable conditions; or not be in concentrations that will contribute to the growth of algae or aquatic plants to a degree of being a nuisance; and should not be in amounts that are toxic to aquatic life, other animals or humans.

 Hydromodification Category (Channelization and Channel Modification, Dams, and Streambanks and Shoreline Erosion) 615 ILCS 5/ Rivers, Lakes and Streams Act

615 ILCS 5/14a IEPA, IDNR, IPCB coordinate preservation of Lake Michigan water

615 ILCS 5/18 (permitting of fills along streams and Lake Michigan)

615 ILCS 5/18a, b, d (permitting/use of materials and minerals at or below bed of public waters)

615 ILCS 5/18f (defining and permits for construction in floodplains)

615 ILCS 5/24 Shoreline encroachment and bed of Lake Michigan in trust for Illinois citizens

615 ILCS 15/ Flood Control Act of 1945

615 ILCS 20/ Navigable Waters Obstruction Act

70 ILCS 3715/ Water Authorities Act

"Nonpoint Source Pollution Control Program" - Under Section 319(h), IEPA receives federal funds for NPS control projects in cooperation with local units of government and other organizations. The program emphasizes funding for implementing corrective, and preventative BMPs on a watershed scale; demonstration of new and innovative BMPs on a non-watershed scale; and the development of public information/materials on NPS control programs. State and local government units, citizen and environment groups, individuals, and businesses are eligible to receive Section 319(h) funds to carry out approved NPS management projects. Examples of funded activities include streambank and shoreline stabilization, wetland restoration, storm water detention basins, bio-swales, terraces, waterways, sediment basins, nutrient management, and education programs. Activities required by law or permit are ineligible.

The "Illinois Clean Lakes Program" (ICLP) is a grant program that supports lake owners' interest and commitment to long-term, comprehensive inland lake management, and improved water quality, and enhanced inland lake use. Detailed "Phase I" feasibility studies scientifically document the causes, sources, and magnitude of lake impairment. Data generated from these monitoring studies are used to recommend lake protection or restoration practices for future implementation. "Phase II" implementation project grants are awarded to implement Phase I report recommendations. Through the ICLP, IEPA provides technical and financial assistance primarily to governmental entities that manage publicly owned lakes with extensive public access and use. Program objectives are control of pollution sources that affect water quality, restoring lakes with impaired recreational and ecological quality, and protecting high quality lake resources. State funding for the program is made available under Conservation 2000.

The "Priority Lake and Watershed Implementation Program" supports inland lake protection/restoration activities at "priority" lakes where causes and sources of problems are apparent, project sites are highly accessible, project size is relatively small, and local entities are in a position to implement needed treatments. Priority lakes are identified in the IEPA report "Targeted Watershed Approach - A Data Driven Prioritization" (IEPA/BOW/97-004). Priority lakes are generally high quality recreational or unique aquatic resources, and/or lakes serving multiple uses (recreation and public water supply) in need of protection or restoration. IEPA works cooperatively with managers of publicly owned inland lakes to

[&]quot;Dredge and Fill Permit Program" (See above)

implement lake protection and restoration activities. Fundable projects include shoreline erosion control (rip rap and/or bioengineering methods); aerator/destratifier installation; near lake dry dams, filter strips; spillway/dam repair; best management practices in immediate watershed of the lake; macrophyte harvest to address public access/use; or dredging to address public access/use.

The "Lake Education Assistance Program" provides for reimbursement of costs incurred up to \$500 for school and other not-for-profit participation in lake/lake watershed related educational field trips and activities or attendance at related workshops.

Wetlands, Riparian areas, and Vegetated Treatment Systems Category

20 ILCS 830/ Interagency Wetlands Policy Act of 1989
515 ILCS 5/ Fish and Aquatic Life Code
520 ILCS 15/ Wildlife Restoration Cooperation Act
520 ILCS 25/ Habitat Endowment Act
525 ILCS 30/ Natural Areas Preservation Act
525 ILCS 33/ Illinois Open Land Trust Act
525 ILCS 35/ Open Space Lands Acquisition and Development Act
415 ILCS 55/ Illinois Groundwater Protection Act

This category includes management measures used in implementation plans to address major categories of nonpoint sources that impair or threaten coastal waters nationally. The programs listed below and previously stated for other categories may include these management measures:

IDNR and IEPA Plan for Coastal NPS Program Development

IEPA is a key supporting state agency to IDNR in ICMP development. IEPA will continue to provide support to the ICMP in developing a Coastal NPS Control Program Development Plan.

Illinois will dedicate a portion of their ICMP funding, funding from the IEPA 319 program, and other funding as needed to develop and administer the Coastal NPS Program. One person from the IDNR-ICMP will be assigned to work with one person from the IEPA Bureau of Water.

On approval of the ICMP, IDNR will develop a land use map of the boundary. IDNR and IEPA will work closely with the USEPA and NOAA to ensure that the map will enable decision making to address

[&]quot;Dredge and Fill Permit Program" (described above)

[&]quot;Nonpoint Source Pollution Control Program" (described above)

[&]quot;Illinois Clean Lakes Program" (described above)

[&]quot;Priority Lake and Watershed Implementation Program" (described above)

[&]quot;Lake Education Assistance Program" (described above)

management and category/subcategory areas that can be excluded. This map will also delineate those areas covered by NPDES permits excluded from the Coastal NPS Program. Development of Coastal NPS Program requires cooperation and assistance of coastal communities in defining their local ordinances and management strategies.